

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of : **Confirmation No. 8623**
Toshihiro NISHII et al. : Attorney Docket No. 2004_1930A
Serial No.10/517,445 : Group Art Unit 3729
Filed December 9, 2004 : Examiner Donghai D. Nguyen
METHOD OF MANUFACTURING CIRCUIT
FORMING BOARD : **Mail Stop: APPEAL BRIEF-PATENTS**

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellants respectfully submit this Reply Brief in response to the Examiner's Answer dated April 13, 2009. Entry of this Reply Brief is respectfully requested.

STATUS OF CLAIMS

Claims 1-16 have been cancelled.

Claims 17-28 stand rejected.

The rejection of claims 17-28 is being appealed.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 17-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant Admitted Prior Art in view of Tsujimoto et al. (US 7,063,768).

ARGUMENT

I. Rejection under 35 U.S.C. § 103(a) over Applicant Admitted Prior Art (hereinafter “AAPA”) in view of Tsujimoto et al. (US 7,063,768) (hereinafter “Tsujimoto”)

Claims 17-28

Independent claim 17 recites a method of manufacturing a circuit forming board, which includes impregnating an elongated reinforcing member with impregnation material, with the reinforcing member extending in a first direction, and transferring the reinforcing member in a second direction such that the first direction of the reinforcing member is parallel to the second direction. Claim 17 also recites that the impregnating of the elongated reinforcing member with impregnation material occurs simultaneously with the transferring of the reinforcing member in the second direction. In addition, the method of claim 17 includes *adhering films directly onto an upper surface and a lower surface, respectively, of the reinforcing member so as to be entirely peelable off of the upper and lower surfaces of the reinforcing member, and transferring the reinforcing member in a third direction orthogonal to the first direction of the reinforcing member.* Claim 17 also recites that the adhering of the films directly onto the upper surface and the lower surface, respectively, of the reinforcing member occurs simultaneously with the transferring of the reinforcing member in the third direction orthogonal to the first direction of the reinforcing member.

The Applicants’ Admitted Prior Art (AAPA), as shown in Figs. 6 and 7 of the present application, discloses a glass cloth 11 having a side extending in a first direction 202 and being moved in a direction 201 parallel to the first direction 202 (see page 1, lines 14-27 of the present application; and Fig. 6 of the present application). Films 14 are then applied to the sheet as the sheet is moved in the direction 201 parallel to the first direction 202 (see page 2, lines 3-8 of the present application; and Fig. 7 of the present application). Thus, as noted by the Examiner in the Office Action of September 5, 2008, the AAPA does not disclose transferring the reinforcing member in a third direction orthogonal to the first direction of the reinforcing member, as required by independent claim 17 (see Office Action at page 3).

Tsujimoto discloses a method for producing a laminated composite which includes supplying a core material C in a longitudinal direction, and bonding a longitudinal sheet S1 to

the core material C by thermocompression bonding to form an intermediate lamination which is cut into pieces L1 (see column 49, lines 20-28; column 50, lines 41-51; and Figs. 21-22).

Further, Tsujimoto discloses that the cut pieces L1 are then transferred in a direction perpendicular to the longitudinal direction (see column 49, lines 30-32; and Fig. 21) or are rotated 90° and continue to be transferred in the longitudinal direction (see column 50, lines 51-53; and Fig. 22). Tsujimoto also discloses bonding a lateral sheet S2 to the pieces L1 to form a final lamination L2 (see column 49, lines 32-39; column 50, lines 53-59; and Figs. 21-22).

In the Office Action of September 5, 2008, the Examiner indicates that the transferring of the core material C in the direction perpendicular to the longitudinal direction shown in Fig. 21 of Tsujimoto corresponds to the transferring of the reinforcing member in a third direction orthogonal to the first direction of the reinforcing member, as required by independent claim 17 (see Office Action at page 3). Further, the Examiner cites column 19, lines 22-23, or column 37, line 34 of Tsujimoto as disclosing that that the transferring of the core material C in the direction perpendicular to the longitudinal direction shown in Fig. 21 while applying the sheets results in “good thickness precision” (see Office Action at page 3). Therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to modify the AAPA by utilizing the transferring of the pieces L1 in a direction orthogonal to the first direction to obtain a circuit board having good thickness precision (see Office Action at page 3).

In the Appeal Brief previously filed on January 21, 2009, it was argued that Tsujimoto does not disclose that the transferring of the core material C in the direction perpendicular to the longitudinal direction results in a good thickness precision, as asserted by the Examiner, as column 19, lines 17-24 and column 37, lines 31-36 of Tsujimoto clearly discloses that the thickness precision of the laminate structure is obtained by changing the displacement in the range of the compressive elasticity area, or by controlling the compressive strain quantity (see Appeal Brief of January 21, 2009 at pages 5-6).

In response to this argument, on page 7 of the Examiner’s Answer, the Examiner asserts that column 3, lines 3-7 of Tsujimoto “discloses the object of the present invention is to provide a composite with a high thickness precision,” and asserts that column 49, line 20 through column 51, line 59 of Tsujimoto discloses “two examples for achieving the above object by transferring the reinforcing member (C) in a third direction orthogonal to the first direction” (see Examiner’s

Answer at page 7, lines 11-15).

However, it is first noted that column 3, lines 3-7 of Tsujimoto discloses that high thickness precision is an object of the invention, and not the object of the invention as indicated by the Examiner, as Tsujimoto discloses more than one object of the invention. Further, it is noted that column 49, line 20 through column 51, line 59 of Tsujimoto (*i.e.*, Examples 14 and 15) is completely silent as to the object of high thickness precision, and thus does not disclose or even suggest that the transferring of the core material C in the direction perpendicular to the longitudinal direction results in a good thickness precision, as asserted by the Examiner. Rather, as indicated above, column 19, lines 17-24 and column 37, lines 31-36 of Tsujimoto clearly discloses that the thickness precision of the laminate structure is obtained by changing the displacement in the range of the compressive elasticity area, or by controlling the compressive strain quantity.

In this regard, the Examiner asserts that column 2, lines 7-13 of Tsujimoto discloses that “the uniformed thickness of the laminated structure cannot be obtained by controlling laminated pressure and temperature,” and asserts that Figs. 21 and 22 and column 2, lines 50-58 discloses that the uniformed thickness is obtained “by compressing/laminating the core material in [the] longitudinal direction and lateral direction...such that the anisotropy in the longitudinal direction and lateral direction is canceled” (see Examiner’s Answer at page 7, lines 15-20).

However, it is first noted that column 2, lines 7-13 of Tsujimoto only indicates that the laminating pressure must be controlled dependently on the temperature, and does not disclose whether a uniform thickness cannot be obtained by controlling laminated pressure and temperature. Further, as indicated above, column 49, line 20 through column 51, line 59 of Tsujimoto (which describes Figs. 21 and 22) does not disclose or suggest that a uniformed thickness is obtained “by compressing/laminating the core material in [the] longitudinal direction and lateral direction” as asserted by the Examiner (see Examiner’s Answer at page 7, lines 15-20). In addition, as stated in column 2, lines 50-58, Tsujimoto discloses that the face material is composed of the longitudinal sheets S1 and the lateral sheets S2 in an orthogonal form with respect to each other in order to cancel anisotropy in the longitudinal and lateral directions, as shown in Figs. 3 and 4. However, Tsujimoto does not disclose that the arrangement of the sheets S1 and S2 results in a uniform thickness, as suggested by the Examiner.

As discussed above, Tsujimoto clearly discloses that the thickness precision of the laminate structure is obtained by changing the displacement in the range of the compressive elasticity area, or by controlling the compressive strain quantity (see column 19, lines 17-24 and column 37, lines 31-36 of Tsujimoto), and does not disclose or suggest that the transferring of the core material C in the direction perpendicular to the longitudinal direction results in a good thickness precision, as asserted by the Examiner. Therefore, it is respectfully submitted that it would not have been obvious to one of ordinary skill in the art to modify the AAPA by utilizing the transferring of the pieces L1 in a direction orthogonal to the first direction to obtain a circuit board having good thickness precision.

Accordingly, it is respectfully submitted that one of ordinary skill in the art would not have modified the AAPA in view of Tsujimoto in such a manner as to result in or otherwise render obvious the present invention of independent claim 17. Claims 18-28 depend from claim 17 and are therefore considered patentable at least by virtue of their dependency.

II. Conclusion

For the reasons set forth above, as well as the reasons set forth in Appellants' Appeal Brief, Appellants respectfully request that the Board reverse the Examiner's rejections of all claims on appeal. A favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,

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